Dangerous Currents

Outreach Efforts in Michigan

Risk Communication, New Messages and Public Resources

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OGL Michigan Office of the Great Lakes DEQ

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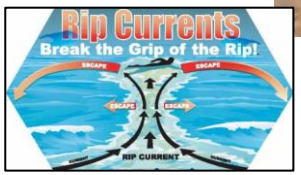
Sea Grant Michigan

Problems:
Distracted, Peer Pressure, Unrealistic…

A Variety of Water Safety Messages

And a Lack of Consistency



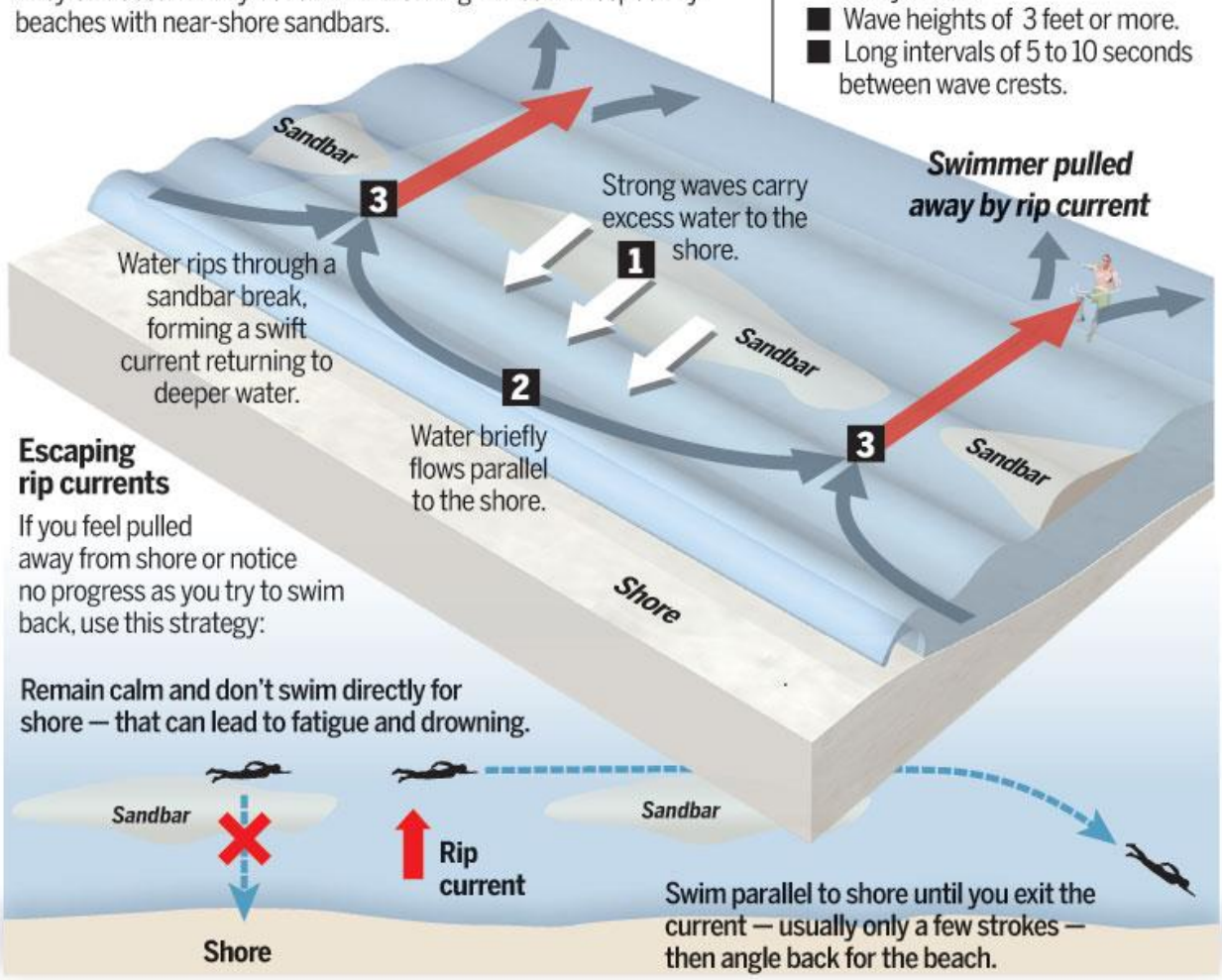
Surviving rip currents

Rip currents are powerful, channeled currents of water that flow away from the shore, often dragging swimmmers into deeper water. They can occur at any beach with breaking waves and especially beaches with near-shore sandbars.

Identify rip current conditions

Four factors that produce rip currents:

- High wind speeds.
- Winds blowing directly toward a sandy beach.
- Wave heights of 3 feet or more.
- Long intervals of 5 to 10 seconds between wave crests.



Escaping rip currents

If you feel pulled away from shore or notice no progress as you try to swim back, use this strategy:

Remain calm and don't swim directly for shore — that can lead to fatigue and drowning.

Source: U.S. Lifesaving Association, National Weather Service

MCT

Need: Focus on MI & GL

Comprehensive, multi-phased effort to help **reduce the loss of life** along Michigan's coastal beach areas

- **Communicate:** MI (E. Coast Lk. MI) is epicenter of incidents
- **Improve:** *Designated Beach Policy* — Provide outreach expertise & recommendations
- **Translate:** Develop *usable* science-based information for target audiences (Meadows & Lapinski teams)

Train DNR Staff

DNR: First responders at most public beaches

- Also, MI Sheriff's Assn. and U.S. Coast Guard
- Stakeholders participated in a series of workshops hosted at DNR park locations over a 2-year period
- Additional workshops were held with other stakeholders, in collaboration with partners in other states

Data Guided Actions & Outputs

- **Incident Data - NWS (Fatalities and Rescues):** Used to determine target groups
  - *Demographics:* 16-24 year old Young Men and Parents
- **Determined need for social scientist to assess risky behavior** (e.g., jumping off piers, swimming in high wave conditions)
  - Also tested draft messages and graphics (diagrams) to be used for new public information materials.

Risk Communication
Considerations

Actions:

- What to do in an emergency
- How to avoid an emergency
- How to help others

Communicate Messages:

- *Before getting to the beach*
  - Forecasts (apps)
  - Publications
  - Social media
- *At the beach*
  - Flags
  - Handouts
- *Near a specific hazard*
  - Signs

Social Science
Lapinski & Viken

MSU research team studied 18-24 y.o. males – findings:

- Alcohol use significant factor in risk-taking
- Intentional risk-taking (often related to alcohol use)
- Most go to the beach with a group
- Many decide to swim before they get to the beach, despite conditions
- Piers were recognized as areas where risk behaviors occur and accidents happen
- Perception that self-rescue skills were good, able to rescue self & friends

Participants recognized color flag system as informative, even if decision was to enter the water

Response

- *Targeted:* Youth, adults (based on NWS data)
- *Multi-faceted:* Considering what to do (1) In an emergency, (2) While at the beach, and (3) Before going to the beach
- *Multi-dimensional Deliverables:* Short publications, signs, website, media outreach, training materials, lessons, and recommendations

Application:
Words and Pictures

Clear and concise text:

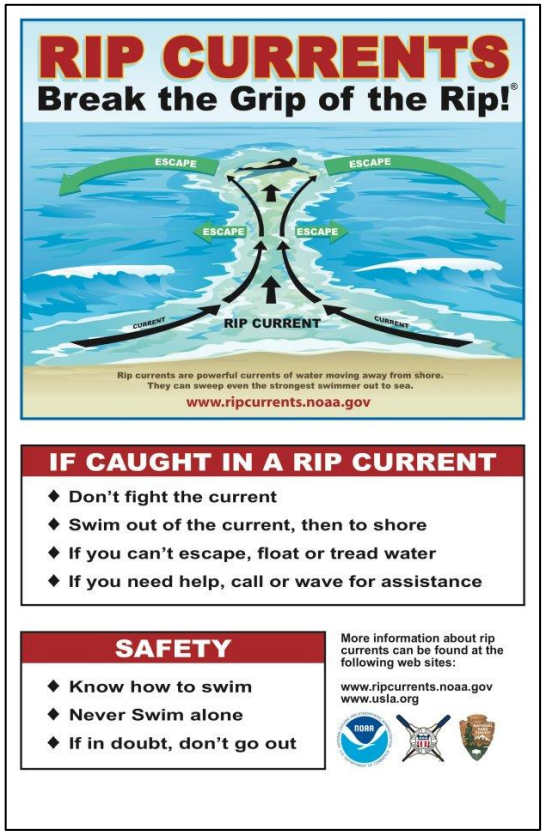
- Used for multiple applications (signs, publications, websites, park notices, etc.)
- Clear diagram supporting and enhancing the text

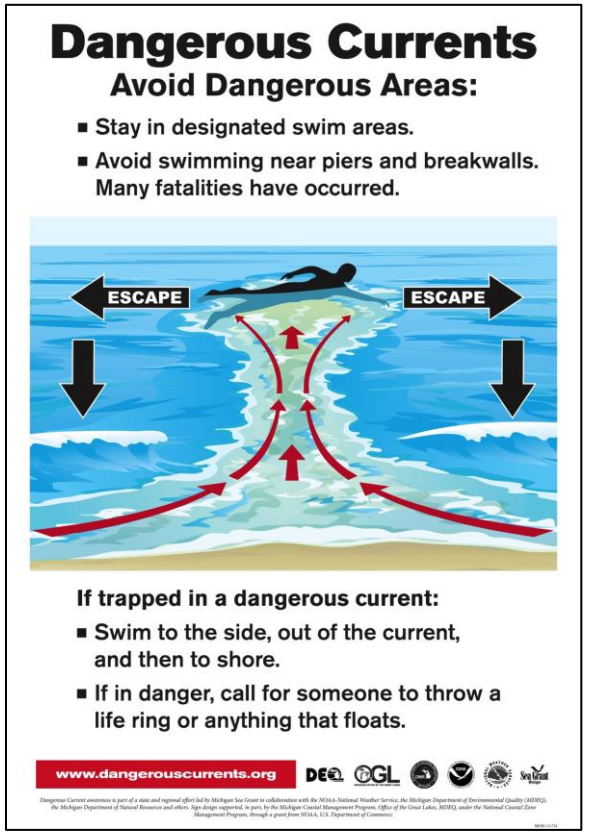
Comparison:
Old and New Signs

Key Differences

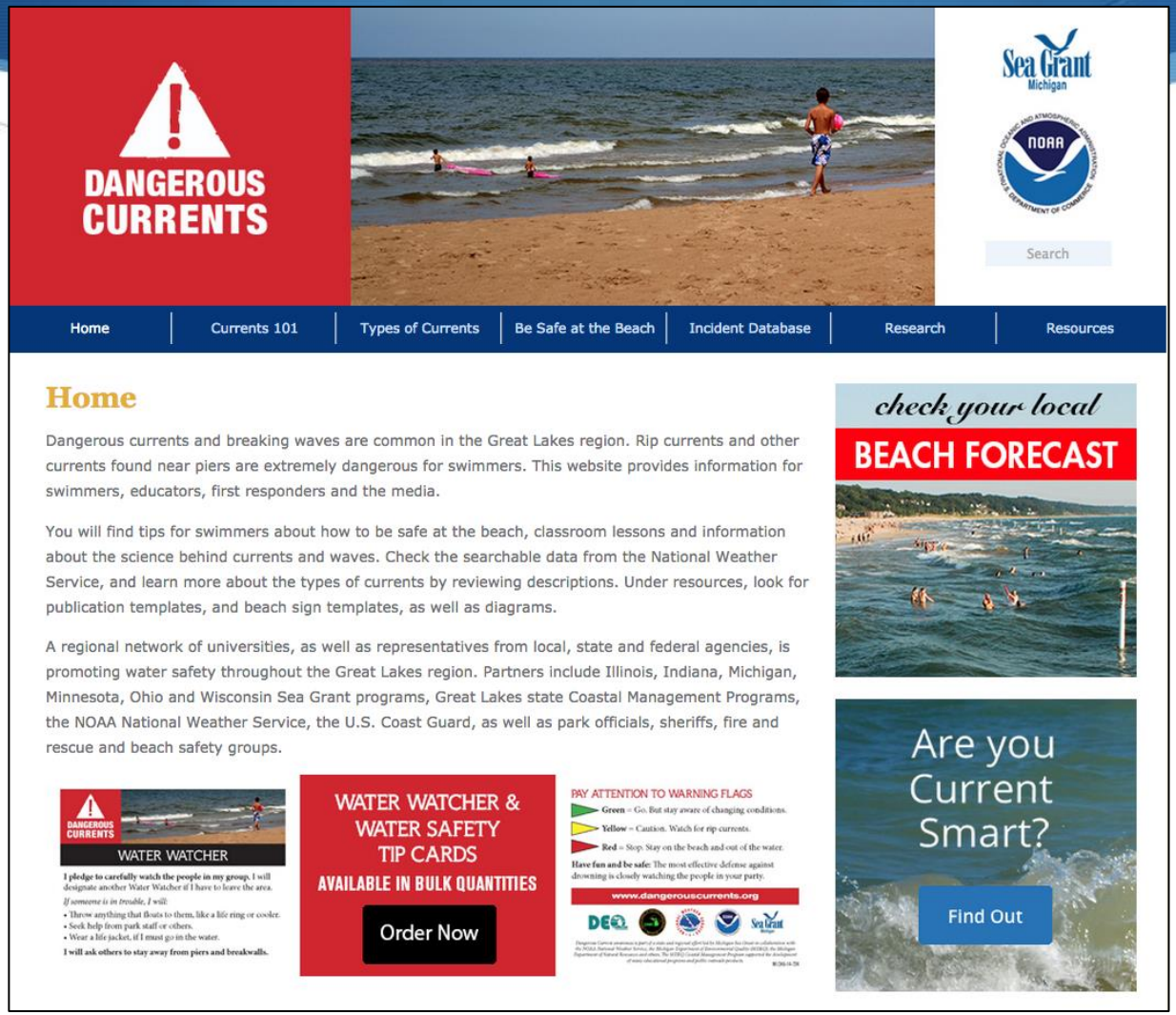
Left: Rip Only

Right: New, multiple hazards (based on Lapinski recommendations)



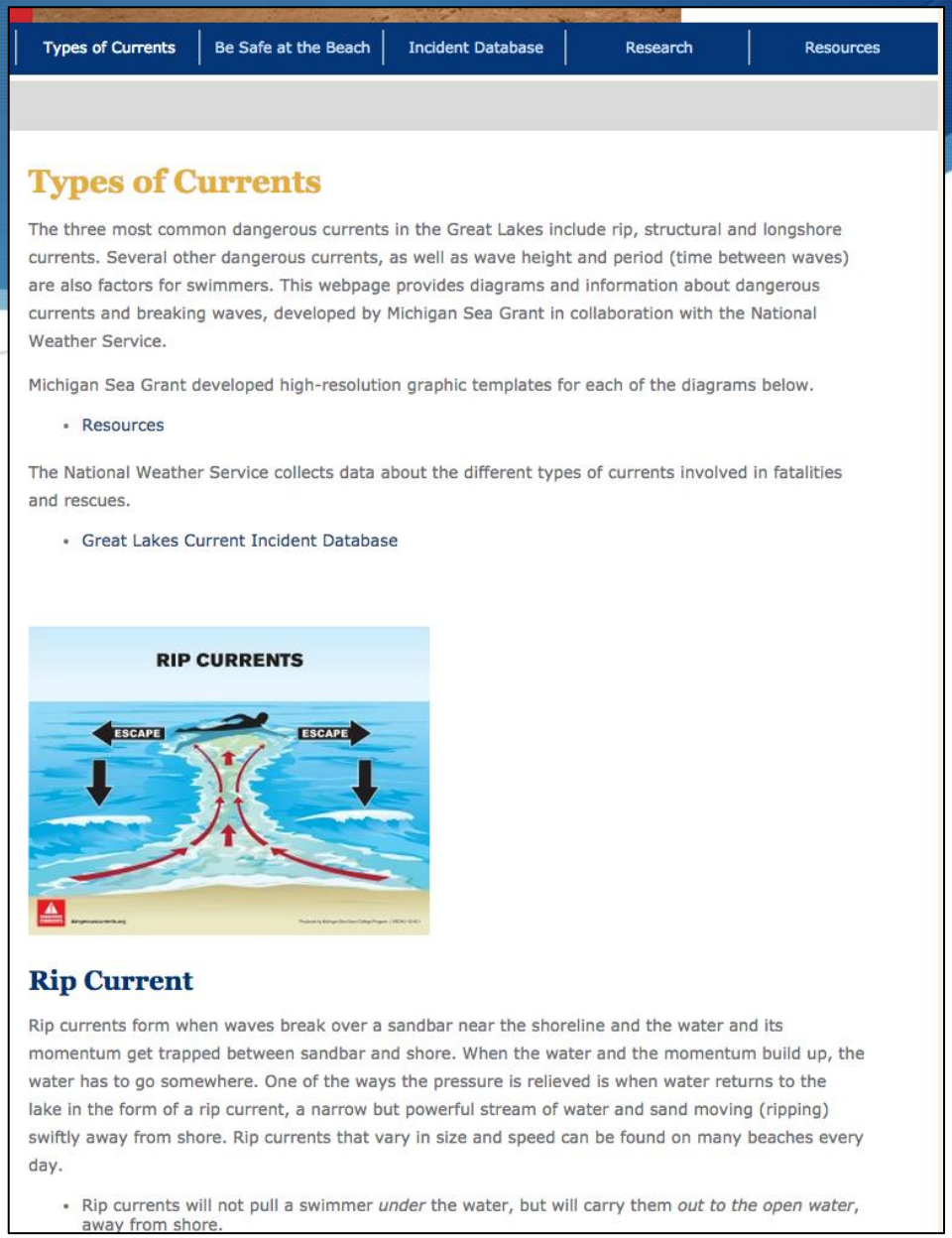


DangerousCurrents.org



Key Features:

- Diagrams & descriptions
- Classroom lessons
- Targeted messages: Parents
- Research summary
- Resources (publication and sign templates)



Types of Currents | Be Safe at the Beach | Incident Database | Research | Resources

Types of Currents

The three most common dangerous currents in the Great Lakes include rip, structural and longshore currents. Several other dangerous currents, as well as wave height and period (time between waves) are also factors for swimmers. This webpage provides diagrams and information about dangerous currents and breaking waves, developed by Michigan Sea Grant in collaboration with the National Weather Service.

Michigan Sea Grant developed high-resolution graphic templates for each of the diagrams below.

- Resources

The National Weather Service collects data about the different types of currents involved in fatalities and rescues.

- Great Lakes Current Incident Database

Rip Current

Rip currents form when waves break over a sandbar near the shoreline and the water and its momentum get trapped between sandbar and shore. When the water and the momentum build up, the water has to go somewhere. One of the ways the pressure is relieved is when water returns to the lake in the form of a rip current, a narrow but powerful stream of water and sand moving (ripping) swiftly away from shore. Rip currents that vary in size and speed can be found on many beaches every day.

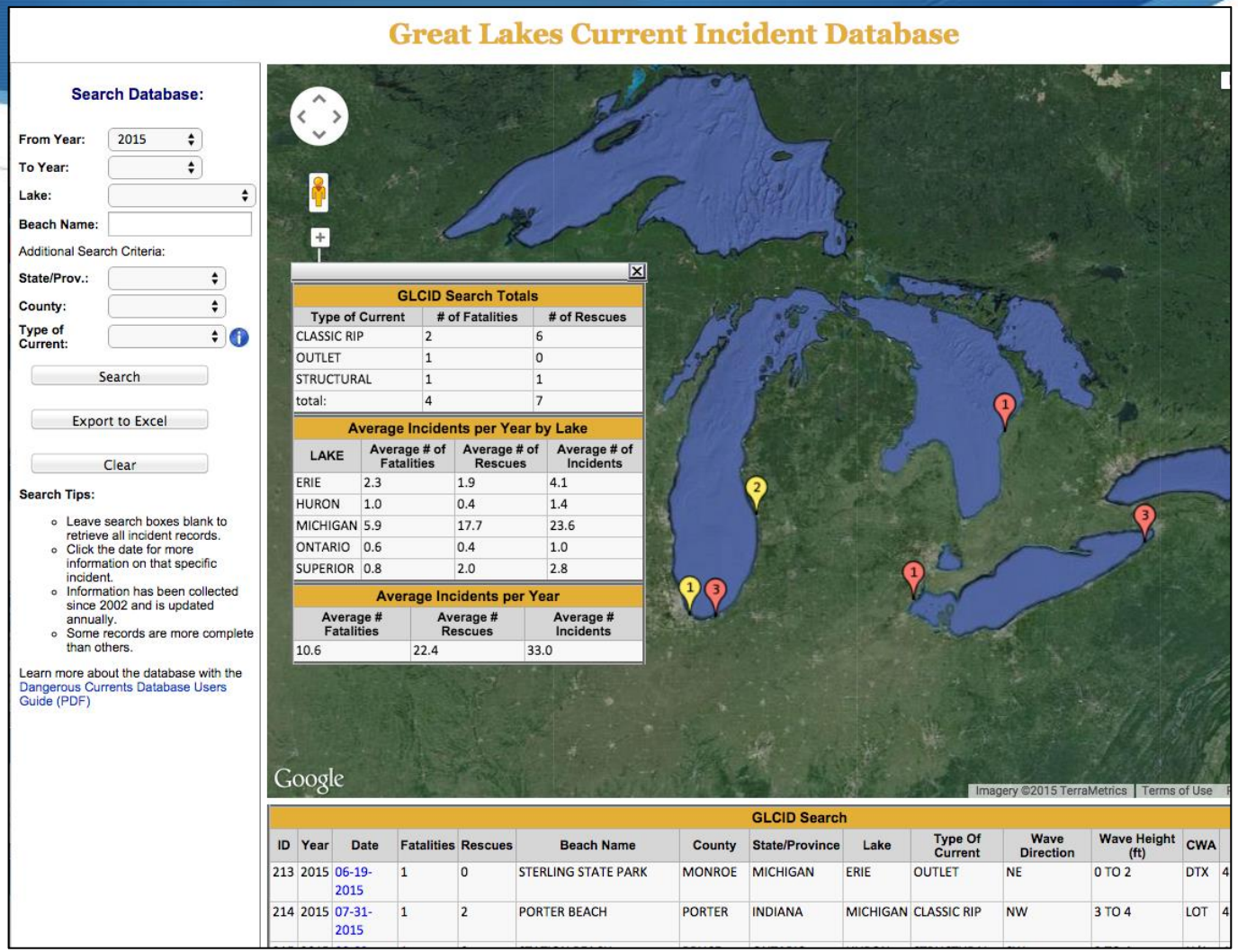
- Rip currents will not pull a swimmer *under* the water, but will carry them *out to the open water*, away from shore.

NWS Data

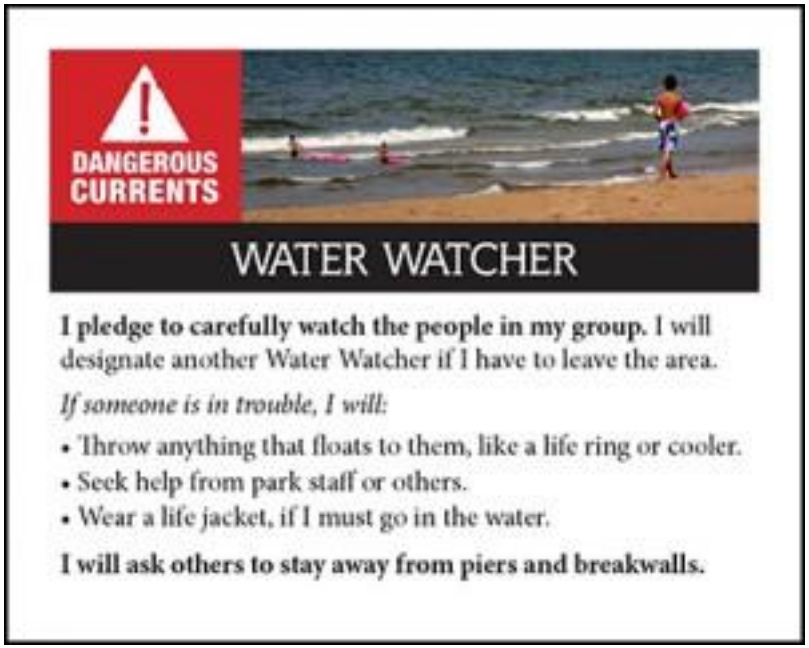
Fatalities & Rescues

Search Functions:

- Year
- Lake
- Beach
- State
- Type of Current



Publications


DANGEROUS CURRENTS

WATER WATCHER

I pledge to carefully watch the people in my group. I will designate another Water Watcher if I have to leave the area.

If someone is in trouble, I will:

- Throw anything that floats to them, like a life ring or cooler.
- Seek help from park staff or others.
- Wear a life jacket, if I must go in the water.

I will ask others to stay away from piers and breakwalls.


DANGEROUS CURRENTS

WATER SAFETY TIPS

PAY ATTENTION TO WARNING FLAGS

DANGEROUS CURRENTS

YOUNG MEN MOST AT RISK

New Equipment, Messages, Tools & Improved Policy

New Messages Applied:

- Publications, Beach Signs, Websites, AND: Regional CSP Project

New Training Materials:

- DNR PPT – Annual Training
- Online Training (to come)

Piloted Equipment:

- 10 DNR-run beaches
- DNR concerned about liability issues

Recommendations:

- Designated Beach Policy

Partners

- Univ. of Michigan & Michigan State Univ.
- Michigan Technological Univ.
- NOAA: NWS & Coastal Storms
- Department of Natural Resources
- National Parks
- And many more

Thank you

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Ron & Mark - SGE

Guy - MTU

First responders, community leaders, volunteers and others